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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/597,539

07/28/2006

Michelle D. Simkulet

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EXAMINER

THOMPSON, TIMOTHY J

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/597,539	<b>Applicant(s)</b> SIMKULET ET AL.	
	<b>Examiner</b> TIMOTHY J. THOMPSON	<b>Art Unit</b> 2873	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-10, 12-16, 18, 19, 22-31, 33-37, 39, 40, 43 and 44 is/are rejected.
- 7) ☒ Claim(s) 5, 11, 17, 20, 21, 32, 38, 41 and 42 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1, 2, 4, 6, 12, 14, 18, 22, 23, 25-27, 33, 35, 43, 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simkulet(U.S. Pat. No. 2004/0254424) in view of Charles(U.S. Pat. No. 6,333,826) and further in view of Bagby et al.(U.S. Pat. No. 4,695,139).**

Regarding claim 1, 18, 22, 23, 43, 44 Simkulet discloses a primary reflector, comprising a convex surface in relation to the forward field, reflective on at least part of the convex surface(fig 2, 124); a secondary reflector, forward of said primary reflector.relative to said forward field, reflective on at least part a surface thereof facing rearward toward said primary reflector, comprising a substantially flat geometry facing rearward toward said primary reflector a primary reflector hole in said primary reflector, substantially centered about an optical axis of said a secondary reflector hole in said secondary reflector, substantially centered about said optical axis of said secondary reflector hole. Simkulet does not disclose the secondary reflector hole having a diameter smaller than a diameter of said primely reflector hole. Infact, Simkulet dose not disclose the hole size of either the first or secondary reflectors, although Simkulet does draw the secondary reflector hole having a diameter smaller than a diameter of said

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primely reflector hole(fig 2). Additionally, Bagby et al. discloses a dual reflector light collecting system in which both reflectors have hole in them centered about the optical axis. Bagby et al., like Simkulet, does not disclose the hole size of either the first or secondary reflectors although Bagby et al. draws the draw the secondary reflector hole having a diameter smaller than a diameter of said primely reflector hole. Additionally, Charles discloses that extending the secondary reflective surface into the path of the hole of the first reflector this increases the angles of view above the first reflector(fig 31, ray 31a) thus the secondary reflector hole having a diameter smaller than a diameter of said primely reflector hole. It would have been obvious to one skilled in the art at the time of the invention to extend the second reflector into the path of the hole of the first reflector thus the secondary reflector hole having a diameter smaller than a diameter of said primely reflector hole as drawn by both Simkulet and Bagby et al., with the panoramic camera of Simkulet, since Simkulet has drawn the secondary reflector hole having a diameter smaller than a diameter of said primely reflector hole and Bagby et al. having a similar reflecting structure also drawing the secondary reflector hole having a diameter smaller than a diameter of said primary reflector hole, this is commonly done so as to increase the angle of view of the collector as well as assures that light passing through the secondary reflector does not strike the reflective surface of the first reflector thus causing unwanted light flux interfering with the incoming light.

Regarding claim 2, 26, Simkulet discloses at lest one field element forward of the secondary reflector(fig 2, 118).

Regarding claim 4, 25 Simkulet discloses at least one field focusing element, rearward of said primary reflector relative to said forward field, substantially centered about said optical axis(fig 2, 116).

Regarding claim 6, 27Simkulet discloses at least one field element forward of the secondary reflector(fig 2, 118) at least one field focusing element, rearward of said primary reflector relative to said forward field, substantially centered about said optical axis(fig 2, 138).

Regarding claims 12, 14, 33, 35 Simkulet discloses that both spherical and parabolic reflectors are used(para 006, para0038).

**Claims 7, 8, 9 28, 29, 30, 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simkulet(U.S. Pat. No. 2004/0254424) in view of Charles(U.S. Pat. No. 6,333,826) and further in view of Bagby et al.(U.S. Pat. No. 4,695,139) as applied to claim6 above, and further in view of Miyano(U.S. Pat. No. 6,852,079).**

Regarding claim 7, 8, 9 28, 29, 30, 39 a modified Simkulet discloses the primary reflector(fig 2, 124), said secondary reflector(fig 2, 127), at least one field collecting element(fig 2, 136) and said at least one field focusing element (fig 2, 139)are configured, in combination, to projected substantially seamless boundary(para 0037) between said forward and panoramic fields. A modified Simkulet does not disclose the light flux projected onto a detection plane. However, Miyano discloses an endoscope in which the light flux is projected onto a detection plane(col 3, lines 50-60). It would have been obvious to one skilled in the art at the time of the invention to use a CCD as

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shown by Miyano, with the endoscope of a modified Simkulet, since as shown by Miyano a CCD is commonly used with endoscopes for capturing the image and displaying it to the user.

Additionally the CCD would have to be placed in the focal plane of the objective lens so as to have a focused image.

**Claim 10, 19, 31, 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Simkulet(U.S. Pat. No. 2004/0254424) in view of Charles(U.S. Pat. No. 6,333,826), Miyano(U.S. Pat. No. 6,852,079) and further in view of Bagby et al.(U.S. Pat. No. 4,695,139) as applied to claim 8 above, and further in view of Yoon(U.S. Pat. No. 6,419,626).**

Regarding claim 10, 19, 31, 40 a modified Simkulet does not disclose an infrared sensor, However, Yoon discloses an infrared sensor stating the endoscopes use infrared optical temperature sensors(col 11, lines 45-50). It would have been obvious to one skilled in the art at the time of the invention to use infrared optical temperature sensors as shown by Miyano, with the endoscope of a modified Simkulet, since as shown by Miyano endoscopes commonly used infrared optical temperature sensors for imaging temperatures.

**Claim 3, 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Simkulet(U.S. Pat. No. 2004/0254424) in view of Charles(U.S. Pat. No. 6,333,826),**

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**Miyano(U.S. Pat. No. 6,852,079) and further in view of Bagby et al.(U.S. Pat. No. 4,695,139) as applied to claim 8 above, and further in view of Krogmann et al.(U.S. Pat. No. 2005/0018069).**

Regarding claim 3, 24 a modified Simkulet does not disclose at least one of the field collecting lenses moves. However, Krogmann et al. discloses at least one of the field collecting lenses moves(fig 3, 64). It would have been obvious to one skilled in the art at the time of the invention to use a movable lens in the collecting lens movable as shown by Krogmann et al., with the endoscope of a modified Simkulet, since as shown by Krogmann et al. panoramic imaging systems commonly move collecting lenses for focusing the imaging thus proving a sharper image.

**Claim 13, 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Simkulet(U.S. Pat. No. 2004/0254424) in view of Charles(U.S. Pat. No. 6,333,826), Miyano(U.S. Pat. No. 6,852,079) and further in view of Bagby et al.(U.S. Pat. No. 4,695,139) as applied to claim 8 above, and further in view of Geng(U.S. Pat. No. 2005/0088435).**

Regarding claim 13, 34 a modified Simkulet does not disclose the primary reflector has a hyperbolic geometry. However, Geng discloses the primary reflector has a hyperbolic geometry (para 0044). It would have been obvious to one skilled in the art at the time of the invention to use the primary reflector has a hyperbolic geometry as shown by Geng, with the endoscope of a modified Simkulet,

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since as shown by Geng the primary reflector commonly has a hyperbolic geometry for reflecting light in an imaging system.

**Claim 15, 16, 36, 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simkulet(U.S. Pat. No. 2004/0254424) in view of Charles(U.S. Pat. No. 6,333,826), Miyano(U.S. Pat. No. 6,852,079) and further in view of Bagby et al.(U.S. Pat. No. 4,695,139) as applied to claim 8 above, and further in view of Matsuki et al.(U.S. Pat. No. 7,408,703) and further in view of Yagi et al.(U.S. Pat. No. 6,130,783).**

Regarding claims 15, 16, 36, 37, a modified Simkulet does not disclose the secondary reflector is concave or convex. However, Matsuki et al. discloses the secondary reflector is concave (fig 1, 2) and Yagi et al. discloses the secondary reflector is convex(fig 2, 2). Since all the claimed elements would continue to operate in the same manner, specifically the light would reflect off of the second reflector and on to the sensor. As such it would have been obvious to one of ordinary skill in the art to use either a concave or convex secondary reflector to reflect the incoming light to the sensor as being no more than the predictable use of prior art elements according to their established functions. *KSR international v. Teleflex Inc (2007)*.

### ***Response to Arguments***

Applicant's arguments filed 2/13/2009 have been fully considered but they are not persuasive. The applicant's argument that the reference Simkulet et al.(U.S. Pat.



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No. 2004/0254424) does not have an earlier filing date than the applicant's application is incorrect. The reference Simkulet et al.(U.S. Pat. No. 2004/0254424) claims priority to a provisional application having a filing date of 4/15/2003 which is an early enough filing date for the reference of Simkulet et al to be considered prior art.

### ***Allowable Subject Matter***

Claims 5, 11, 17, 20, 21, 32, 38, 41, 42 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to TIMOTHY J. THOMPSON whose telephone number is (571)272-2342. The examiner can normally be reached on 8:30 AM - 6:00 Pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mack Ricky can be reached on (571) 272-2333. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Timothy J Thompson/  
Primary Examiner, Art Unit 2873

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